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ABSTRACT

This study was designed to confirm the hypothesis that objectives which focused on items of information best facilitated reading retention among a population of elementary school children while controlling for the children's reading level rather than for the "density" of the reading passage. Two 550-word reading passages taken from "Life in the Ancient World" were rewritten to conform to sixth-grade readability levels. Alternate form reliability was established in a preliminary investigation in which cloze tests constructed from both passages were administered to a group of 45 sixth graders. It was concluded that, given the design of this study, neither specific nor general reading directions influenced the level of reading achievement. It may be that sixth-grade children just have not yet developed the reading skills necessary to use reading directions of the type provided in this experiment. For these children, purpose setting directions which are facilitative may be those which are discussed, verbalized, or in some manner internalized, rather than those presented in a list. (RB)

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CHILDREN'S READING ACHIEVEMENT AS A FUNCTION OF VARYING SPECIFICITY OF PURPOSE SETTING DIRECTIONS

Margaret B. Jones

A purpose or an active set to learn with accompanying selective processes has long been observed to be a primary determiner of learning. In research dealing with the reading process, investigators have examined the role of questions or reading directions in establishing purposeful reading. Although it has been observed that these purpose setting directions frequently do increase the level of reading achievement and also define that which is to be remembered (1, 9, 13, 15, 17), there appears to be no agreement among investigations as to the amount of information upon which each reading direction should focus. Reading directions are often either phrased in the general terms of "learn about," or they direct children to read to be able to answer questions after reading. Because there is some empirical data (8, 15) to suggest that directions of this type are relatively ineffective, it seems important to determine how specifically purpose setting directions need to be phrased in order to be more effective. This study is an attempt to do so.

Related Research

Frase (5) reported an exploratory study in which three types of purpose setting questions differed as to specificity -- the specific questions asked for one detail, the comparative for two and the general for four pieces of information. He predicted that a general purpose setting question would result in greater comprehension of a 36-word passage than would more specific pre-questions. Contrary to expectation, the specific question group scored highest when tested either for retention of question relevant (intentional) items or when tested for total recall (intentional and incidental information).

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Rothkopf & Kaplan (15) studied the effect on reading achievement when specificity of instructional objectives and "density" of the text were varied. Instructional objectives were either specific, calling for one fact, or general, directing attention to two or more facts. "Density" was a term used to describe the percentage of sentences in the text which were relevant to at least one instructional objective. Participating high school students were told they would be tested on only the information relevant to the instructional objectives, when in fact they were tested on most of the information in the passage. This permitted determining levels of achievement on both intentional (objective relevant) and incidental (objective irrelevant) items. The level of performance on the incidental items was found not to be affected either by varying the specificity of instructional objectives or by varying the "density." Performance on intentional items, however, was higher when readers were given specific objectives. As "density" of the test increased, the likelihood of learning any particular item was observed to decrease.

The Rothkopf & Kaplan study suggested that objectives which focused on single items of information best facilitated reading retention; however, the findings were limited to a high school population. The present study was designed to extend this investigation to a population of elementary school children while controlling for the children's reading level rather than for the "density" of the reading passage. The plan was to look at the reading achievement of children reading at, above, and below the sixth grade level when they were given study-type reading directions which varied as to specificity.

Method

Materials: Two 550-word reading passages taken from Life in the Ancient World by Winer, were rewritten to conform to sixth grade readability. Reada-

bility was checked through measures proposed by Fry (6) and Dale-Chall (4). Alternate form reliability was established in a preliminary investigation in which cloze tests constructed from both passages were administered to a group of 45 sixth graders. One of these passages was used as reading material for the experimental task, the other served as a text for a cloze test used to determine reading achievement levels.

It seemed important to determine as accurately as possible, children's ability to read the passage used for the experimental task. By using a cloze test developed in material comparable to that passage material, it was possible to provide a relatively close match between the instrument used for determining reading level and the subsequent reading task. The cloze test could, therefore, be assumed to give a fairly accurate measure of the readers' ability to comprehend the experimental reading passage. Empirical support for this procedure is supplied by Bormuth (2, 3), Gallant (7), and Jenkinson (10). Cloze test criteria used for reading level placement were: at, 30% to 40%; above, over 40%; below, 10% to 20%. These were established by correlating scores from a cloze test, an IRI in the same material, and CTBS scores (11).

Three sets of reading directions varying in specificity were designed. One condition simply informed readers that they would be tested on the passage after reading. The other two, specific directions and general directions instructed readers to learn particular information stated in the text. (Specific directions were phrased so that each statement referred to one sentence in the text. For example, learn who carried a litter. General directions referred to two or more sentences in the text. For example, learn all about a litter.) The sets of directions were so written that a sequence of specific directions equated one general direction. For instance, when the reader was given three successive

sentences. Only one general direction might direct him to learn this same information. In this way a topically related series of specific directions was considered equivalent to one general direction.

The ability of children reading at a sixth reader level to comprehend these purpose setting directions was determined by a method suggested by Simons (16). Each direction was rewritten first, with the syntax altered and second, with the meaning changed. Given each original direction and its transformations, 18 children reading at the sixth grade level were asked to match the direction with the sentence which was a paraphrase. A mean of .5 errors was interpreted as verification of sixth grade readability.

The achievement test designed to measure retention at the end of the reading task, consisted of 32 sentences. These statements, evenly divided between intentional and incidental items, were taken almost exactly from the reading passage, but with a substantive word omitted in each statement. The statements designated intentional items on this test referred to sentences in the text relevant to the reading directions. The incidental items were statements corresponding to most of the remaining sentences in the reading passage.

Sample: On the basis of cloze test performance, 42 children were randomly chosen at each reading achievement level: at, above, and below the sixth reading level. Each group of 42 was then partitioned by randomly assigning its members to one of the three experimental conditions: specific reading directions, general reading directions or the direction to read to be tested. This meant the experimental sample of 126 was divided into nine groups, 14 children per group.

Procedure: Each group of 14 children representing one achievement level and assigned to one experimental condition was tested separately. Each child

was given three numbered manilla envelopes containing: (1) appropriate purpose setting directions and the reading passage, (2) the achievement test, (3) reading material to occupy him until all in the group had completed the task. Children were cautioned to work through the envelopes in order, viewing the contents of only one envelope at a time. This meant that children might refer to the reading directions while reading the passage, but that both the directions and the reading passage would be replaced in the proper envelope before the achievement test was begun. Children controlled their own reading and test time.

Results

A 3 x 3 x 2 factorial design with repeated measures was used to analyze the data. The independent group variables were (1) three levels of reading ability; at, above, and below grade level; (2) three purposes for reading: specific, general, and control; (3) two measures of type of learning: intentional and incidental. This last factor was treated as a repeated measure. These data were then analyzed as a one-within, two-between factorial analysis of variance. Tests of the specific a Priori hypothesis were made using the Bonferroni-Dunn (12) with an alpha level of .05. Examination of the analysis suggested the following:

There was a significant difference in performance among groups of children reading at different achievement levels (see Figure 1). The above level readers scored higher than the at level readers (t=-.01, df=117, Error 1, 1-tailed B-D=1.98) while the combined group of at and above level readers scored higher than the below level readers (t=5.90, df=117, Error 1, 1-tailed B-D=1.98).

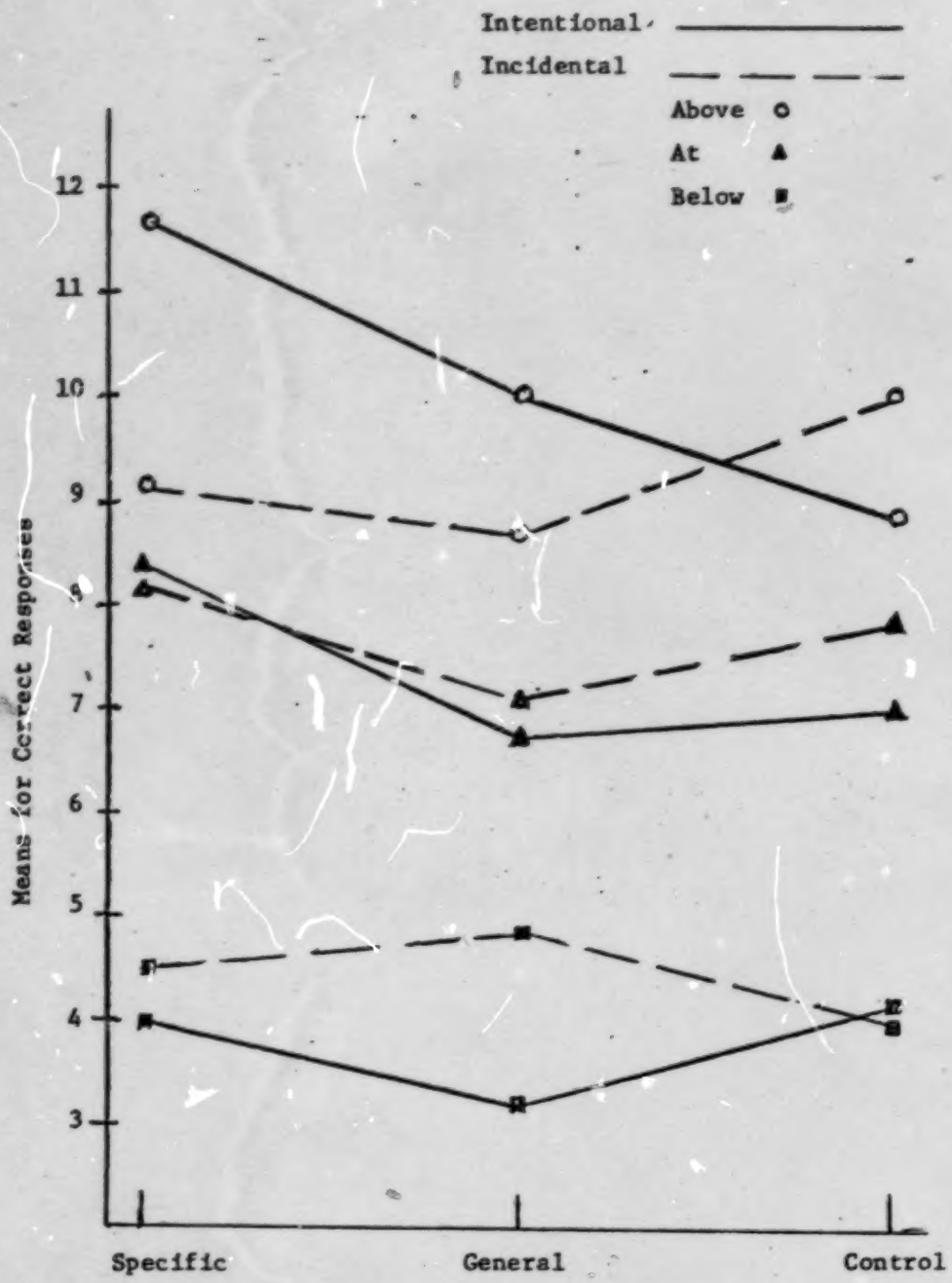

Figure 1. Treatment by Reading Level for Intentional and Incidental Learning

Purpose setting directions did not significantly influence either overall achievement or level of achievement on intentional items ($F=1.56$, $df=2$, $p < .213$). Although as hypothesized, there were no significant differences in the levels of incidental learning, the concomitant finding of no significant differences in levels of intentional learning made interpretation unclear. A significant ABC interaction in the overall analysis of variance (see Table 1), justified testing the contrast between intentional and incidental learning at each reading level. Purpose setting directions apparently served as discriminators of relevant information only for above level readers ($t=3.11$, $df=117$, Error 2, approximate B-D=2.58).

Table 1. Summary of Analysis of Variance of Mean Achievement Scores for Intentional and Incidental Items as a Function of Purpose Setting Directions and Reading Levels.

Source	df	MS	F
Between			
A (reading level)	2	723.35	49.774**
B (treatment)	2	22.65	1.56
AB	4	3.34	.23
Subj. w. groups (Error 1)	117	14.53	
Within			
C (learning type)	1	2.10	.784
AC	2	11.16	4.165*
BC	2	5.91	2.205
ABC	4	7.95	2.967*
C x Subj. w. groups (Error 2)	117	2.68	

Note: In testing some contrasts, a pooled error term was used. The pooled error term reflects within cell variation and is determined by dividing the pooled error 1 and error 2 sums of squares by the corresponding pooled degrees of freedom. The value of this pooled error term is 8.60 with 234 degrees of freedom.

*.01
**.001

Discussion

It was not unexpected to find a significant difference in performance among groups of children reading at different achievement levels, for good readers generally achieve at higher levels than do poor readers. However, these findings would seem to be contingent on an accurate categorizing of readers within achievement levels. Results of this study would appear, therefore, to justify the use of a cloze test to determine achievement levels. Although cloze procedure has been the subject of many research studies in the last twenty years, and its utility for defining reading levels has been repeatedly suggested, it has rarely been used to establish reading achievement groups for research purposes. This experience with cloze procedure with its simplicity of construction, brief administration time and ease of scoring would seem to recommend it for future investigations.

Unlike the Rothkopf & Kaplan study, purpose setting directions were found not to facilitate achievement on intentional items. It had been predicted that above level readers reading at what would be an independent reading level might process all of the material, thereby making little use of the reading directions. But, for those reading at or below grade level, specific directions and to a lesser degree, general directions had been predicted to facilitate reading achievement. The reading directions were intended to provide a series of focal points which would have eliminated coping with irrelevant material. Perhaps instead of providing focal points, too many points were provided, making reading directions tantamount to reading the passage. The ineffectiveness of either type of direction may have been a result either of the experimental task or of the readers' perception of the task. Proger, Carter, et al, (14) reported similar

results with sixth graders reading at and below grade level. They attributed the ineffectiveness of a sentence outline organizer to a lack of maturity which would have enabled children to benefit from "conceptual prestructuring."

It had been predicted that as in the Rothkopf & Kaplan study, there would be no significant differences in incidental learning as a result of purpose setting directions. Although no differences were observed, the concomitant finding of no significant differences in levels of intentional learning made interpretation unclear.

Reading directions which focused attention on particular facts had been predicted to act as discriminators between those facts and the remainder of the reading passage. This would have resulted in a significant difference between levels of intentional and incidental learning. Only with above level readers did this difference occur. It could have been that these above level readers who, having found reading activities rewarding, were inclined to make use of any advantage (ie. directions) to succeed at the task. By contrast, the below level readers having probably developed a dislike for and an avoidance of reading activities might have viewed the directions as just one more reading task to be accomplished. Degree of self-confidence about a reading task might also be a partial explanation. The above level readers, better attuned to using reading skills, might have been more willing to make use of questions to direct study-type reading than the below level readers who might have felt, without attempting the task, that reading and using directions was too difficult. Although this describes only readers at each extreme reading level, it can be suggested that the reading behavior of at level readers would fall between the extremes.

A limitation of the present study was its use of atypical purpose setting and testing materials. Attempting to parallel the Rothkopf & Kaplan study, with a 40% "density," resulted in providing 16 specific or five general reading directions for a reading passage of 40 sentences. This meant the achievement test of 16 intentional and 16 incidental questions required information from almost every sentence in the text. It is unusual to expect children to remember many isolated facts from a reading passage without giving them some sort of categorizing system for remembering. This is especially true when the reading passage contains many items of information which are not expanded by supporting explanation and are therefore almost in rote order. In addition, the intentional items, those identified by the reading directions, were not necessarily the most important items in the passage. Actually, care had been taken to evenly distribute direction-relevant material throughout the reading passage in order to minimize effects of position on memory. As a result, any tendency for readers to remember main points, to categorize material or to set their own purposes may have affected the results. It is also quite likely that asking these readers to deal effectively with even 16 direction-relevant items exceeded their span of memory and thereby influenced results.

Nevertheless, it must be concluded, that given the design of this study, neither specific nor general reading directions were facilitative. Neither type influenced the level of reading achievement. It may be that sixth grade children just have not yet developed the reading skills necessary to enable them to utilize reading directions of the type provided in this experiment. For these children, purpose setting directions which are facilitative, may be those which are discussed, verbalized, or in some manner internalized, rather than those presented in a list.

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